ELOY MUNICIPAL AIRPORT

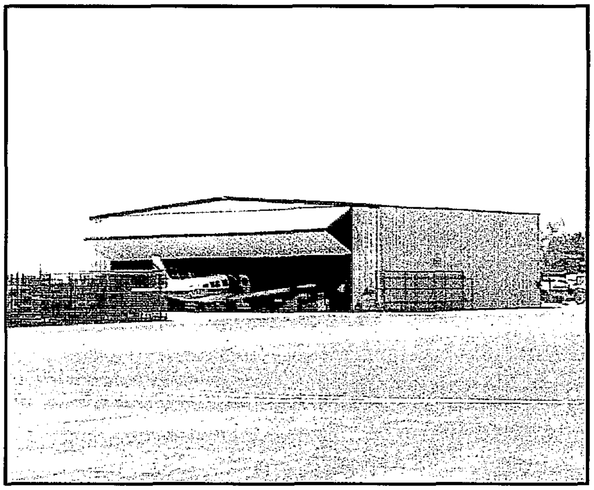
Chapter Three
AVIATION FACILITY REQUIREMENTS

Chapter Three

AVIATION FACILITY REQUIRMENTS

To properly plan for the future of Eloy Municipal Airport, it is necessary to translate forecast aviation demand into the specific types and quantities of facilities that can adequately serve this identified demand. This chapter uses the results of the forecasts conducted in Chapter Two, as well as establishing planning criteria, to determine the airfield (i.e., runways, taxiways, navigational aids, marking and lighting), and landside (i.e., hangars, terminal building, aircraft parking apron, fueling, automobile parking and access) facility requirements.

The objective of this effort is to identify, in general terms, the adequacy of the existing airport facilities, outline what new facilities may be needed, and when



these may be needed to accommodate forecast demands. Having established these facility requirements, alternatives for providing these facilities will be evaluated in Chapter Four to determine the most cost-effective and efficient means for implementation.

Recognizing that the need to develop facilities is determined by demand, rather than a point in time, the requirements for new facilities have been expressed for the short, intermediate, and long term planning horizons, which roughly correlate to five-year, ten-year, and twenty-year time frames. Future facility needs will be related to these activity levels rather than a specific year. **Table 3A** summarizes the activity levels that define the planning horizons used in the remainder of this master plan.

TABLE 3A Planning Horizon Activity Levels	Short Term Planning Horizon	Intermediate Term Planning Horizon	Long Term Planning Horizon
Based Aircraft	26	36	48
Annual Operations	62,000	88,000	119,000

AIRFIELD REQUIREMENTS

Airfield requirements include the needs for those facilities related to the arrival and departure of aircraft. These facilities are comprised of the following items:

- Runways
- Taxiways
- Navigational Aids
- Airfield Marking and Lighting

The following airfield facilities are outlined to describe the scope of facilities that would be necessary to accommodate the airport's role throughout the planning period.

AIRFIELD DESIGN STANDARDS

The selection of the appropriate FAA design standards for the development of the airfield facilities is based primarily upon the characteristics of the aircraft which are expected to use the airport. The most critical characteristics are the **approach speed** and the size of the **critical design aircraft** anticipated to use the airport now or in the future. The critical design aircraft is defined as the most demanding category of aircraft which makes 500 or more operations per year. Planning for future aircraft use is of particular importance since design standards are used to plan separation distances between facilities. These standards must be determined now since the relocation of these facilities will likely be extremely expensive at a later date.

The FAA has established criteria for use in the sizing and design of airfield facilities. These standards include criteria which relate to aircraft size and performance. According to FAA Advisory Circular (AC) 150/5300-13, *Airport Design*, an aircraft's approach category is based upon 1.3 times its stall speed in landing configuration at that aircraft's maximum certificated weight. The five approach categories used in airport planning are as follows:

Category A: Speeds of less than 91 knots.

Category B: Speeds of 91 knots or more, but less than 121 knots.

Category C: Speeds of 121 knots or more, but less than 141 knots.

Category D: Speeds of 141 knots or more, but less than 166 knots.

Category E: Speeds of 166 knots or greater.

The second basic design criteria relates to aircraft size. The Airplane Design Group **(ADG)** is based upon wingspan. The six groups are as follows:

Group I: Up to but not including 49 feet.

Group II: 49 feet up to but not including 79 feet.

Group III: 79 feet up to but not including 118 feet.

Group IV: 118 feet up to but not including 171 feet.

Group V: 171 feet up to but not including 214 feet.

Group VI: 214 feet or greater.

Together, approach category and ADG identify a coding system whereby airport design criteria are related to the operational and physical characteristics of the aircraft intended to operate at the airport. This code, the **Airport Reference Code** (ARC), has two components: the first component, depicted by a letter, is the aircraft approach category and relates to aircraft approach speed (operational characteristic); the second component, depicted by a Roman numeral, is the airplane design group and relates to aircraft wingspan (physical characteristic). Generally, aircraft approach speed applies to runways and runway-related facilities, while airplane wingspan primarily relates to separation criteria involving taxiways and taxilanes. **Table 3B** provides a listing of typical aircraft including their approach speed, wingspan, maximum takeoff weight, and Airport Reference Code.

The FAA advises designing airfield elements to meet the requirements of the airport's most demanding, or critical aircraft. As discussed above, this is the aircraft, or group of aircraft making 500 of more operations per year. In order to determine facility requirements, the ARC of the airport should first be determined, then appropriate airport design criteria can be applied.

Eloy Municipal Airport is currently utilized by general aviation aircraft ranging from small single-engine piston aircraft to twin engine turbine-powered aircraft. Turbine-powered aircraft currently utilizing the airport include those conducting aerial applications of fertilizer for area farmlands and skydiving activities. The Shorts Skyvans and DHC-6 Twin Otters operated by Skydive Arizona fall within ARC's B-II and A-II, respectively. The Douglas DC-3 operated occasionally by Skydive Arizona falls within ARC A-III. The Cessna Husky, Turbine Thrush, and Schweizer Ag-cats operated by Ag-Aero and Al-Don Dusting fall within ARC A-I.

In the future, Eloy Municipal Airport can expect to serve a growing number of operations by more sophisticated general aviation and corporate aircraft. Examples of aircraft which may utilize the airport on an increasing basis in the future are the Cessna Citation and Dassault Falcon business jet families of aircraft, Beech Super King Air, and the Cessna 441 Conquest. All aircraft currently and projected to utilize the airport range between ARC A-I and B-II. While the potential exists for larger business turboprop and jet aircraft to use the airport, it will be unlikely that these larger aircraft, which fall within Approach Categories C and D, will comprise at least 500 annual operations at the airport. Thus, planning for airfield and landside elements must consider FAA design criteria for ARC B-II.

TABLE 3B
Representative General Aviation Aircraft by Airport Reference Code

Airport Reference Code	Typical Aircraft	Approach Speed (knots)	Wingspan (feet)	Maximum Takeoff Weight (lbs.)
	Single-Engine Piston			
A-I	Cessna 150	55	32.7	1,600
A-I	Cessna 172	64	35.8	2,300
A-I	Beechcraft Bonanza	75	37.8	3,850
	Multi-Engine Piston			
B-I	Beechcraft Baron 58	96	37.8	5,500
B-I	Piper Navajo	100	40.7	6,200
B-I	Cessna 421	96	41.7	7,450
	Turboprop			
B-I	Mitsubishi MU-2	119	39.2	10,800
B-I	Piper Cheyenne	119	47.7	12,050
B-I	Beechcraft King Air B-100	111	45.8	11,800
B-I	Business Jets	108	47.1	11,850
B-I	Cessna Citation I	104	42.9	18,740
	Falcon 10			
	Turboprop			
B-II	Beechcraft Super King	103	54.5	12,500
B-II	Air	100	49.3	9,925
	Cessna 441			
B-II	Business Jets	108	51.7	13,330
B-II	Cessna Citation II	114	53.5	22,000
B-II	Cessna Citation III	107	53.5	28,660
B-II	Falcon 20	100	63.4	45,500
	Falcon 900			
	Business Jets			
C-I	Learjet 55	128	43.7	21,500
C-I	Rockwell Sabre 75A	137	44.5	23,300
C-I	Learjet 25	137	35.6	15,000
	Turboprop			
C-II	Rockwell 980	121	52.1	10,325
	Business Jets			
C-II	Canadair Challenger	125	61.8	41,250
C-II	Gulfstream III	136	77.8	68,700
	Business Jets			
D-I	Learjet 35	143	39.5	18,300
D-II	Gulfstream II	141	68.8	65,300
D-II	Gulfstream IV	145	78.8	71,780

RUNWAYS

The adequacy of the existing runway system at Eloy Municipal Airport has been analyzed from a number of perspectives, including airfield capacity, runway orientation, runway length, and pavement strength. From this information, requirements for runway improvements were determined for the airport.

Airfield Capacity

A demand/capacity analysis measures the capacity of the airfield facilities (i.e. runways and taxiways) in order to identify a plan for additional development needs. The capacity of the airfield is affected by several factors including airfield layout, meteorological conditions, aircraft mix, runway use, aircraft arrivals, aircraft touch-and-go activity, and exit taxiway locations. An airport's airfield capacity is expressed in terms of its annual service volume. Annual service volume is a reasonable estimate of the maximum level of aircraft operations that can be accommodated in a year.

Pursuant to FAA guidelines detailed in the FAA Advisory Circular 150/5060-5, *Airport Capacity and Delay*, the annual service volume of a single runway configuration normally exceeds 230,000 operations. Since the forecasts for the airport indicate that the activity throughout the planning period will remain below 230,000 annual operations, the capacity of the existing airfield system will not be reached, and the airfield can meet operational demands. Therefore, the facility requirements analysis will concentrate on developing the appropriate facilities to improve safety and service considerations rather than demand variations.

Runway Orientation

The airport is presently served by a single runway, Runway 2-20, oriented in a northeast-southwest direction. For the operational safety and efficiency of an airport, it is desirable for the principal runway of an airport's runway system to be oriented as close as possible to the direction of the prevailing wind. This reduces the impact of wind components perpendicular to the direction of travel of an aircraft that is landing or taking off (defined as a crosswind).

Current wind information specific to Eloy Municipal Airport is not available. For this reason, wind data presented on the previous Airport Layout Plan (ALP) was utilized for analysis purposes. The wind data was obtained from Williams Air Force Base (located 30 nautical miles northeast of Eloy Municipal Airport) for the ten-year period of 1976 to 1986. Due to these two factors, time period and distance, the information used to construct this wind rose may not reflect existing wind conditions at the Airport. Given these two variables, it is recommended that a one-year wind study be conducted to more accurately analyze ambient wind conditions at the Airport. For the purpose of this report, however, using the Williams Gateway Airport wind data, the existing runway orientation provides 97.7 percent coverage for a 10.5 knot crosswind component. Therefore, based on the available wind data, Runway 2-20 provides adequate crosswind coverage for the planning period and the construction of a crosswind runway is not necessary.

Runway Length

The determination of runway length requirements for an airport are based on five primary factors: airport elevation; mean maximum temperature of the hottest month; runway gradient (difference in elevation of each runway end); critical aircraft type expected to use the airport, and stage length of the longest nonstop trip destinations. Aircraft performance declines as elevation, temperature, and runway gradient factors increase.

An analysis of the existing and future fleet mix indicates that business jets will likely be the most demanding aircraft for runway length at Eloy Municipal Airport. Business aircraft expected to utilize the airport in the future range from the Cessna Citation I, with minimal runway length requirements, to the Citation III, requiring longer runway lengths.

Table 3C outlines the runway length requirements for various classifications for aircraft that utilize the Eloy Municipal Airport. These standards were derived from the FAA Airport Design Computer Program. As with other design criteria, runway length requirements are based upon the critical aircraft grouping with at least 500 annual operations.

TABLE 3C
Runway Length Requirements

AIRPORT AND RUNWAY DATA	
Airport elevation	1,513 feet
Mean daily maximum temperature of the hottest month	95 F
Maximum difference in runway centerline elevation	6 feet
RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes with approach speeds of less than 30 knots	400 feet
Small airplanes with approach speeds of less than 50 knots	900 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	3,100 feet
95 percent of these small airplanes	3,700 feet
100 percent of these small airplanes	4,300 feet
Small airplanes with 10 or more passengers seats	**4,700 feet**
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	5,500 feet
100 percent of these large airplanes at 60 percent useful load	6,300 feet

REFERENCE: FAA Design Software Version 4.2A

Based upon the existing aircraft fleet operating at Eloy Municipal Airport and the projected aircraft fleet through the long term planning period, Eloy Municipal Airport should be designed to accommodate corporate aircraft ranging up to ARC B-II. The appropriate FAA runway length planning category for aircraft within ARC B-II is "small airplanes with 10 or more passengers seats". At its present length of 3,900 feet, Runway 2-20 exceeds the requirements to serve 95 percent of small airplanes with less than ten passenger seats, but falls short of the requirements for aircraft within the design category for the airport (refer to small airplanes with ten or more passenger seats). In general, the existing runway length is sufficient for departures when temperatures are mild and destinations are to regional markets. To safely accommodate larger piston-engine, turboprop, or business jet aircraft, which are commonly used for business and corporate purposes, during summer months and without limiting aircraft loading or flights lengths, the FAA recommends a runway length of 4,700 feet.

Analysis of runway length require-ments for the most demanding aircraft within ARC B-II was conducted. A review of the flight planning manuals for the Cessna Citation and Falcon family of aircraft indicates that under normal operating conditions (mild temperatures and average take-off weights) the runway length required by these aircraft averages 4,700 feet. For operations during the warmest summer months and at heavier take-off weights needed for longer flights, the runway length required by these business jets can reach upwards of 6,000 feet. Generally, an extension of Runway 2-20 providing 4,700 feet of runway will adequately accommodate the critical aircraft a majority of the time.

For planning purposes, Runway 2-20 should ultimately be planned for a minimum 4,700 feet to better accommodate aircraft within the design category of the airport. The alternatives analysis will examine alternatives for a longer runway length of 5,500 feet to fully accommodate critical business jet aircraft during the warmest summer months.

Runway Width

Runway 2-20 is currently 60 feet wide. This width is adequate for aircraft in Group I; however, FAA design standards call for a 75 foot width for Group II aircraft. Therefore, the runway should be planned to be widened to 75 feet once additional runway length is provided.

Runway Strength

Runway 2-20 has a pavement strength of 12,000 pounds single-wheel gear loading strength (SWL). This is adequate for aircraft that currently use the airport on a regular basis. However, the corporate aircraft projected to utilize the airport on a frequent basis could weigh up to 30,000 pounds in a dual-wheel gear (DWL) configuration. Therefore, the Runway 2-20 pavement strength should be strengthened to 30,000 pounds DWL once additional runway length is provided.

TAXIWAYS

Taxiways are constructed primarily to facilitate aircraft movements to and from the runway system. Some taxiways are necessary simply to provide access between the aprons and runways, whereas other taxiways become necessary as activity increases at an airport to provide safe and efficient use of the airfield. Runway 2-20 is served by a 40 foot wide full length parallel taxiway. The centerline of the parallel taxiway lies 200 feet south of runway centerline. The runway is also served by three entrance/exit taxiways, one located at each runway end and one located approximately midfield.

Design standards for taxiway width and the separation distances between runways and parallel taxiways are based primarily on the Airplane Design Group (ADG). Design group II has been designated for future airfield design. Design standards specify a taxiway width of 35 feet and runway/parallel taxiway separation distance of 240 feet. The existing runway/parallel taxiway separation distance does not meet minimum design standards. The alternatives analysis will examine the various options available to meet FAA design criteria for runway/parallel taxiway separation distance. The existing taxiway widths exceed FAA design standards.

While the number of runway exits is sufficient for current activity levels and aircraft mix, additional exits placed midway between the midfield taxiway and each runway end would improve airfield efficiency. These additional taxiways would allow aircraft to exit the runway without taxiing to the runway end. In addition, many smaller aircraft may be able to use these exits and not be required to taxi to the midfield taxiway exit.

The City of Eloy constructed a taxiway extending from the southwest edge of the aircraft parking apron to the Runway 2 end in 1994. This taxiway is located on a piece of property donated to the City by T.D.C. Properties, Inc. Currently, the fence which was utilized for perimeter security lies between the taxiway and the airfield. Access to the Runway 2 end from this taxiway is through a break in the fence which has been provided at the southern end of the taxiway. This taxiway provides access to privately-owned parcels located adjacent to the airport and should be maintained through the planning period.

NAVIGATIONAL AIDS AND INSTRUMENT APPROACH PROCEDURES

Electronic navigational aids are used by aircraft during an approach to the airport. Instrument approach procedures are a series of maneuvers designed by the FAA which utilize navigational aids and aid pilots in locating and landing at an airport and are especially helpful during poor weather conditions. Currently, Eloy Municipal Airport is not served by an instrument approach. Therefore, the airport is effectively closed during poor weather conditions when visual flight can no longer be conducted. The increased use of general aviation aircraft for business and corporate uses has advanced the need for approaches at non-commercial airports. With the need for the airport to support and enhance business and industrial growth in the City of Eloy, it is important that the airport is accessible during all weather conditions and the amount of time that the airport is inaccessible due to inclement weather is reduced. Therefore, facility planning should include establishing instrument approaches at the airport so that the airport is accessible during poor weather conditions. The advent of Global Positioning System (GPS) technology will ultimately provide the airport with the capability of establishing instrument approaches at the airport. As mentioned previously in Chapter One, the FAA is proceeding with a program to transition from existing ground-based navigational aids to a satellite-based navigation system utilizing GPS technology. GPS is currently certified for enroute guidance and for use with instrument approach procedures. The initial GPS approaches being developed by the FAA provide only course guidance information. By the year 1999, it is expected that GPS approaches will also be certified for use in providing descent information for an instrument approach. This capability is currently only available using an Instrument Landing System.

GPS approaches fit into three categories, each based upon the desired visibility minimum of the approach. The three categories of GPS approaches are: one-half mile, three-quarter mile, and one mile. To be eligible for a GPS approach, the airport landing surface must meet specific standards as outlined in Appendix 16 of the FAA Airport Design Advisory Circular. The specific airport landing surface requirements which must be met in order to establish a GPS approach and a comparison of theses standards to existing airport facilities is summarized in **Table 3D**.

TABLE 3D
GPS Instrument Approach Requirements

Requirement	One-Half Mile Visibility	3/4 Mile Visibility Greater Than 300-Foot Cloud Ceiling	One Mile Visibility Greater Than 400-Foot Cloud Ceiling	Existing
Minimum Runway Length	4,200 Feet	3,500 Feet	2,400 Feet	3,900 Feet
Runway Markings	Precision	Nonprecision	Visual	Visual
Runway Edge Lighting	Medium Intensity	Medium Intensity	Low Intensity	Medium Intensity
Approach Lighting	MALSR	ODALS Recommended	Not Required	None
Primary Surface	500 feet clearance on each side of runway	500 feet clearance on each side of runway	250 feet clearance on each side of runway	425 feet clearance from runway centerline to T-hangars

Source: Appendix 16, FAA AC 150/5300-13, Airport Design, Change 5
MALSR - Medium Intensity Approach Lighting System with Runway Alignment Lighting
ODALS - Omni-directional Approach Lighting System

As evidenced in the table, the existing airport site can support a GPS approach with one mile visibility minimums. For lower GPS approach minimums, the airport would need to invest in additional lighting systems and possibly relocate existing facilities. As noted in **Table 3D**, GPS approaches with minimums lower than one-mile visibility require a greater separation of airfield and landside elements. For one-half mile visibility and three-quarter mile visibility minimums, the FAA requires a cleared primary surface measuring 500 feet on either side of the runway centerline. A portion of the T-hangar facilities and a conventional hangar are located 425 feet from runway centerline. GPS approaches with visibility minimums lower than one-mile could not be implemented without relocating these hangar facilities.

According to regional weather observations, visual weather conditions (visibility greater than three miles and cloud ceiling greater than 1,000 feet above the ground) occur nearly 99 percent of the time. Therefore, it would appear that only limited instrument approach capability is needed at the airport as weather conditions seldom fall below visual conditions. Based upon the prevailing weather conditions and the costs associated with relocating existing airport facilities and upgrading airport lighting, it would appear unnecessary to plan for GPS approaches with visibility minimums lower than one-mile. Therefore, facility planning should include establishing GPS approaches that provide for landings when visibility is restricted to one mile and cloud ceilings are as low as 400 feet above the ground.

LIGHTING AND MARKING

Currently, there are a number of lighting and pavement markings aids serving pilots and aircraft using the Eloy Municipal Airport. These lighting and marking aids assist pilots in locating the airport during night or poor weather conditions, as well as assist in the ground movement of aircraft. The current and future lighting and marking requirements for the airport are summarized below.

Identification Lighting

The airport is equipped with a rotating beacon to assist pilots in locating the airport at night. The existing rotating beacon is adequate and should be maintained in the future.

Airfield Lighting

Runway 2-20 is equipped with threshold lighting and medium intensity runway lighting (MIRL). These lighting systems are sufficient and should be maintained through the planning period. Currently, the taxiway system is without pavement edge lighting. To enhance the safety of operations along the taxiway surfaces at night, facility planning should include the installation of pavement edge lighting along the parallel taxiway, runway entrance/exit taxiways, and newly constructed taxiway serving the privately-owned parcels on the south side of the airport. Apron lighting would enhance security and aircraft operations at night.

Visual Approach Lighting

Visual glide slope indicators (VGSI) are a system of lights located at the side of the runway which provide visual descent guidance information during an approach to the runway. The runway is not currently equipped with a VGSI system. Facility planning should include installing a VGSI system to each runway end to aid approaching aircraft determine the designed vertical descent path to the runway.

Approach Lighting

Currently, both ends of Runway 2-20 are equipped with an omnidirectional approach lighting system (ODALS). The ODALS wiring system has been destroyed by local wildlife and is not operational. An ODALS would be useful if the airport were served by an instrument approach with visibility minimums lower than one-mile. Considering the maintenance and repair costs associated with the existing ODALS and that a GPS approach with one-mile visibility minimum does not require an extensive approach lighting system such as an ODALS, these systems are no longer required and could be removed.

Runway end identification lighting provides the pilot with a rapid and positive identification of the runway end. The most basic system involves runway end identifier lights (REIL's). REIL's are normally installed to runways with an instrument approach. REIL's should be installed to each runway end to enhance the safety of future GPS approaches to the airport.

Pavement Markings

Currently, Runway 2-20 is equipped with visual runway markings that identify the runway centerline and designation. These markings are sufficient for the future GPS approaches and should be maintained through the planning period.

OTHER AIRSIDE COMPONENTS

The airport has a lighted wind cone and segmented circle which provides pilots with information about wind conditions and local traffic patterns. Each of these facilities should be maintained in the future.

CONCLUSIONS

A summary of the airfield facility requirements is presented on **Exhibit 3A.** Additional runway length is needed to adequately serve the full-range of aircraft which fall within the planning ARC for the airport without reducing flight lengths or loading capabilities. Ultimately, GPS approaches with one-mile visibility minimums should be established for the airport. Pavement edge lighting is needed along all taxiway surfaces at the airport. A VGSI system installed at each runway end would enhance visual operations at the airport. REIL's installed at each runway end would aid pilots in correctly identifying each runway end during poor weather conditions and enhance the safety of future GPS approaches. The existing ODALS systems are currently inoperable and not required in the future. It will not be necessary to repair and maintain these systems.

LANDSIDE REQUIREMENTS

Landside facilities are those necessary for handling of aircraft and passengers while on the ground. These facilities provide the essential interface between the air and ground transportation modes. The capacities of the various components of each area were examined in relation to projected demand to identify future landside facility needs.

AIRCRAFT STORAGE HANGARS

The space required for hangar facilities is dependent upon the number and type of aircraft expected to be based at the airport. Based upon an analysis of general aviation facilities and the current demand at Eloy Municipal Airport, percentages representing hangar requirements for various types of general aviation aircraft have been calculated. The analysis indicates that most based aircraft at the airport are stored in hangars with the exception for a few aircraft which remain tied down on the apron area.

Weather conditions at Eloy Municipal Airport, including blowing dust and extreme heat in the summer, suggest nearly all of the based aircraft owners prefer hangar space to outside tie-downs. Since this is their preference, it is necessary to determine what percentages of these aircraft would utilize conventional-type hangars as opposed to individual T-hangars. T-hangars are less expensive to construct and provide the aircraft owner more privacy and greater ease in obtaining access to the aircraft. The principal uses of conventional hangars at general aviation airports are for large aircraft storage, storage during maintenance, and for housing fixed base operator activities.

Table 3E estimates future hangar requirements for the airport. A planning standard of 1,200 square feet per based aircraft stored in T-hangars has been used to determine future T-hangar requirements. A planning standard of 2,500 square feet for large aircraft stored in conventional hangars has been used to determine future conventional hangar requirements. Conventional hangar area was increased by 15 percent to account for future aircraft maintenance needs.

AIRCRAFT PARKING APRON

A parking apron should be provided for at least the number of locally-based aircraft that are not stored in hangars, as well as transient aircraft. As observed by the airport FBO, as many as five to seven aircraft regularly tiedown on the apron. Although the majority of future based aircraft were assumed to be stored in an enclosed hangar, a number of based aircraft will still tiedown outside. Total apron area requirements were determined by applying a planning criterion of 700 square yards per transient aircraft parking position and 500 square yards for each locally-based aircraft parking position. The results of this analysis are presented in **Table 3F.**

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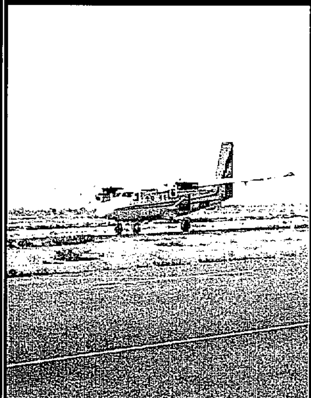
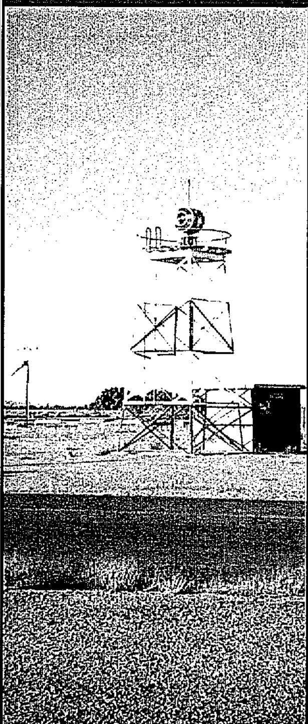
	EXISTING	SHORT TERM NEED	LONG TERM NEED
RUNWAYS AND TAXIWAYS			
	**Runway 2-20** 3,900' x 60' 12,500 lbs. SWL Full-length Parallel Taxiway Three Entrance/Exit Taxiways	**Runway 2-20** 4,700' X 75' 12,500 lbs. SWL Same	**Runway 2-20** 5,500' x 75' 30,000 lbs. SWL Additional Exit Taxiways
NAVIGATIONAL AIDS, AIRFIELD LIGHTING, AND MARKING			
	Rotating Beacon	Same	Same
	Medium Intensity Runway Lighting	Same	Same
	Visual Runway Markings	Same	Same
		Medium Intensity Taxiway Lighting	Same
		Global Positioning System Approaches Each Runway End	Same
		Visual Glideslope Indicators (VGSI's) Each Runway End	Runway End Identifier Lights (REIL's) Each Runway End

ELOY MUNICIPAL AIRPORT

Exhibit 3A
AIRFIELD REQUIREMENTS

TABLE 3E Aircraft Storage Hangar Requirements					
			Future Requirement		
	Currently Available	**Current Requirements**	**Short Term**	**Intermediate Term**	**Long Term**
Aircraft to be Hangared		15	19	28	39
T-Hangar Positions	12	12	16	21	29
Conventional Hangar Positions	5	3	3	7	10
Conventional Hangar Area (s.f.)	24,740	4,100	5,600	18,600	27,300
T-Hangar Area (s.f.)	14,400	14,400	19,200	25,200	34,800
Total Hangar Area (s.f.)	39,140	18,500	24,800	43,800	62,100

TABLE 3F Apron Requirements					
			Future Requirements		
	Currently Available	**Current Requirements**	**Short Term**	**Intermediate Term**	**Long Term**
Transient Apron					
Positions		7	9	14	22
Apron Area (s.y.)		4,900	6,300	9,800	15,400
Locally-Based Aircraft Apron					
Positions		7	8	8	9
Apron Area (s.y.)		3,500	4,000	4,000	4,500
Total Positions	36	14	17	22	31
Total Apron Area (s.y.)	18,000	8,400	10,300	13,800	19,900

GENERAL AVIATION TERMINAL FACILITIES

General aviation terminal facilities have several functions including: providing space for passenger waiting, a pilot's lounge and flight planning, concessions, management, storage and various other needs. This space is not necessarily limited to a single, separate terminal building but also includes the space offered by fixed base operators for these functions and services. Currently, there is not a dedicated airport terminal facility; however, flight planning, concessions, and public restrooms are available to the public on the east side of Hangar #5.

The methodology used in estimating general aviation terminal facility needs was based on the number of airport users expected to utilize general aviation facilities during the design hour. Future space requirements were hen based upon providing 75 square feet per design hour itinerant passenger. **Table 3G** outlines requirements for general aviation terminal services at the airport through the planning period.

TABLE 3G
Terminal Requirements

			Future Requirements		
	Currently Available	**Current Requirement**	**Short Term**	**Intermediate Term**	**Long Term**
Design Hour Passengers		8	11	17	28
Building Space (s.f.)		600	800	1,300	2,100

AVIATION SUPPORT FACILITIES

Various facilities that do not logically fall within classifications of airfield, terminal building, or general aviation facilities have been identified for inclusion in this Master Plan. Facility requirements have been identified for these remaining facilities:

- Airport Access
- Vehicle Parking
- Fuel Storage

AIRPORT ACCESS

Primary access to Eloy Municipal Airport is available from Tumbleweed Road. This paved two-lane roadway connects with State Highway 84 south of the airport. State Highway 84 provides access to the City of Eloy central business district and Interstate Highway 10. The ability of Tumbleweed Road to accommodate future airport traffic will be more a function of future growth and activity generated by Skydive Arizona. Lear Drive connects with Tumbleweed Road and extends along the south side of the airport property.

Lear Drive provides access to the T-hangar facilities and the privately-owned parcels of land located adjacent to the airport. Lear Drive is currently is poor condition and should be improved to accommodate automobile traffic in the future.

VEHICLE PARKING

An unpaved area south of the apron currently provides the only area for public and on-airport employee vehicle parking. Access to the apron and hangar areas is available for based aircraft owners. While this is adequate for current use, designated paved parking areas will be needed in the future to accommodate increased general aviation activity, especially corporate activity. Vehicle parking requirements for future terminal facilities have been determined utilizing a planning standard of 1.3 spaces per design hour passenger and 400 square feet for each parking position. Vehicle parking requirements for hangars and other aviation facilities at the airport were determined as a percentage of based aircraft utilizing the same multiplier described above. **Table 3H** outlines vehicle parking requirements for the airport.

TABLE 3H
Vehicle Parking Requirements

	Currently Available	Current Requirement	Short Term	Intermediate Term	Long Term
Design Hour Passengers		8	11	17	28
Terminal Vehicle Spaces		11	14	22	37
Parking Area (s.f.)		4,300	5,600	8,900	14,600
General Aviation Spaces		11	14	18	25
Parking Area (s.f.)		4,400	5,600	7,200	10,000
Total Parking Spaces		22	28	40	62
Total Parking Area (s.f.)		8,700	11,200	16,100	24,600

FUEL STORAGE

On-airport fuel storage totals 12,000 gallons in an aboveground storage tanks which has separate tanks containing 6,000 gallons each of 100LL and Jet-A fuel. Fuel is dispensed through a "card lock" system which requires a credit card to operate. Each of the off-airport aerial applicators and Skydive Arizona maintain fuel storage. Fuel storage requirements can vary based upon individual supplies and distributer policies. For this reason, fuel storage requirements will be dependent upon the independent distributors.

CONCLUSIONS

A summary of landside facility requirements is presented on **Exhibit 3B**. To accommodate forecast demand, enclosed T-hangar and conventional hangar space will be required through the planning period. The number of tiedowns and available apron area appears to be sufficient for future growth. Additional terminal space, possibly a separate terminal building, may be required as itinerant use of the airport increases. Paved parking areas are needed adjacent to aircraft tiedown and storage areas and near the terminal area for on-airport employee and public parking. Lear Drive is in poor condition and in need of repair.

SUMMARY

The intent of this chapter has been to outline the facilities required to meet potential aviation demands projected for Eloy Municipal Airport through the planning horizon. The next step is to develop a direction for development to best meet these projected needs. The remainder of the master plan will be devoted to outlining this direction, its schedule, and costs.

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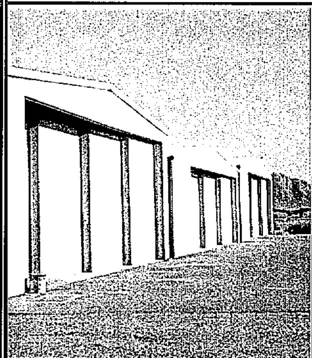
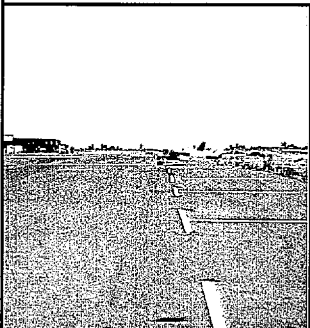
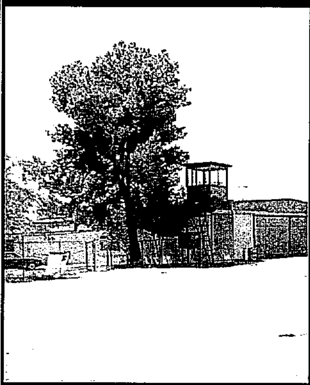
		EXISTING	CURRENT NEED	SHORT TERM NEED	INTERMEDIATE TERM NEED	LONG TERM NEED
AIRCRAFT STORAGE HANGARS						
	T-Hangar Positions	12	12	16	21	29
	Conventional Hangar Positions	5	3	3	7	10
	T-Hangar Area (s.f.)	24,739	4,100	5,600	18,600	27,300
	Conventional Hangar Area (s.f.)	14,400	14,400	19,200	25,200	34,800
	Total Hangar Area (s.f.)	39,139	18,500	24,800	43,800	62,100
APRON AREA						
	Transient Apron Positions	---	7	9	14	22
	Locally-Based Aircraft Positions	---	7	8	8	9
	Total Positions	36	14	17	22	31
	Total Apron Area (s.y.)	18,000	8,400	10,300	13,800	19,900
TERMINAL FACILITIES						
	Building Space (s.f.)	---	600	800	1,300	2,100
	Terminal Vehicle Spaces	---	11	14	22	37
	General Aviation Spaces	---	11	14	18	25
	Total Parking Spaces	---	22	28	40	62
	Total Parking Area (s.f.)	---	8,700	11,200	16,100	24,600

ELOY MUNICIPAL AIRPORT

Exhibit 3B
LANDSIDE REQUIREMENTS